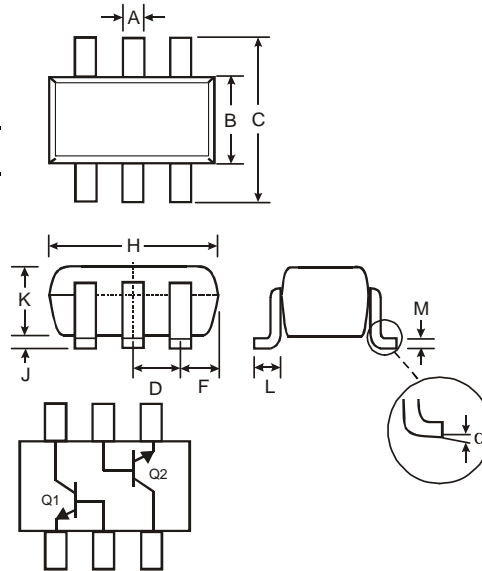


Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device, Note 4 and 5

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Marking Information: K3M, See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.008 grams (approximate)



SOT-26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
F	—	—	0.55
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current (Note 1) (Note 2)	I_C	500	mA
Power Dissipation (Note 1)	P_d	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. When operated under collector-emitter saturation conditions within the safe operating area defined by the thermal resistance rating ($R_{\theta JA}$), power dissipation rating (P_d) and power derating curve (Figure 1).
 3. No purposefully added lead.
 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 5. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)					
Collector-Base Breakdown Voltage	V _{(BR)CBO}	300	—	V	I _C = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	—	V	I _C = 1.0mA, I _B = 0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6.0	—	V	I _E = 100μA, I _C = 0
Collector Cutoff Current	I _{CBO}	—	100	nA	V _{CB} = 200V, I _E = 0
Collector Cutoff Current	I _{EBO}	—	100	nA	V _{CE} = 6.0V, I _C = 0
ON CHARACTERISTICS (Note 6)					
DC Current Gain	h _{FE}	25 40 40	—	—	I _C = 1.0mA, V _{CE} = 10V I _C = 10mA, V _{CE} = 10V I _C = 30mA, V _{CE} = 10V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	0.5	V	I _C = 20mA, I _B = 2.0mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	0.9	V	I _C = 20mA, I _B = 2.0mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C _{cb}	—	3.0	pF	V _{CB} = 20V, f = 1.0MHz, I _E = 0
Current Gain-Bandwidth Product	f _T	50	—	MHz	V _{CE} = 20V, I _C = 10mA, f = 100MHz

Notes: 6. Short duration pulse test used to minimize self-heating effect.

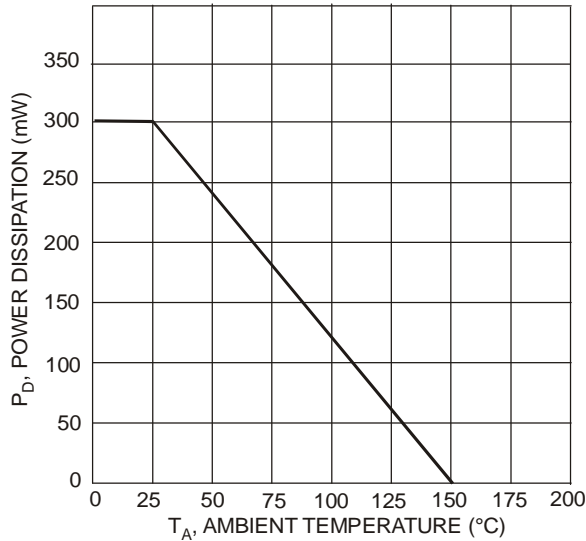


Fig. 1, Max Power Dissipation vs. Ambient Temperature

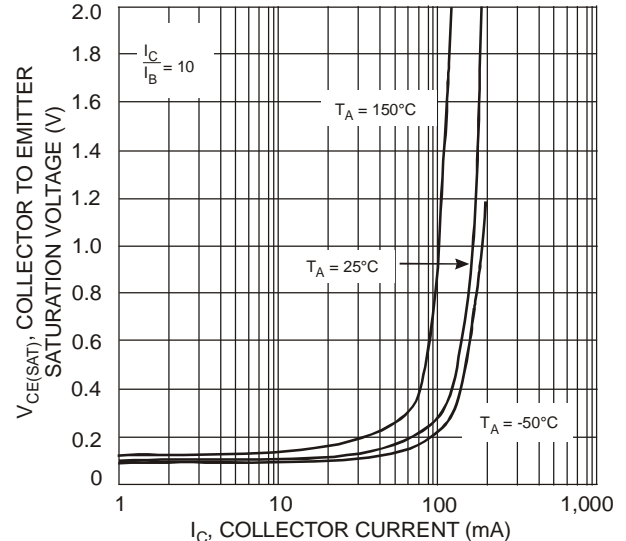


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

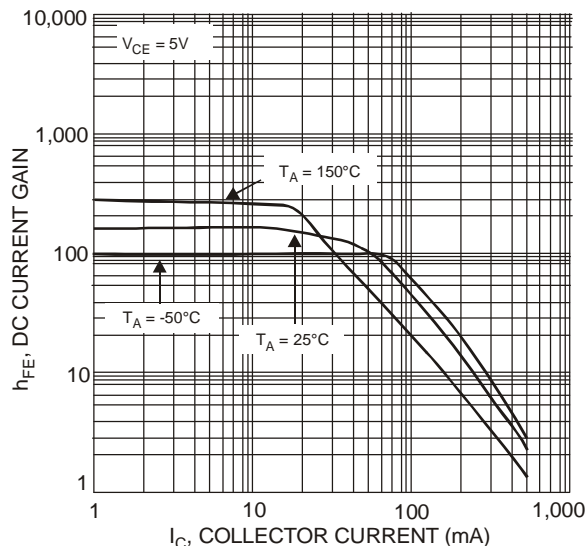


Fig. 3, DC Current Gain vs. Collector Current

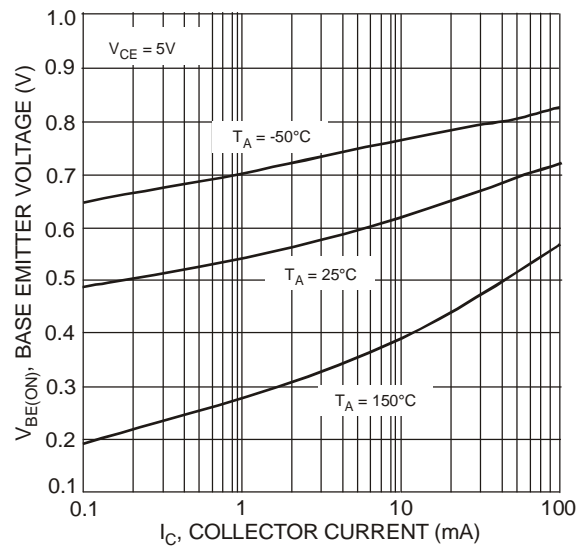


Fig. 4, Base Emitter Voltage vs. Collector Current

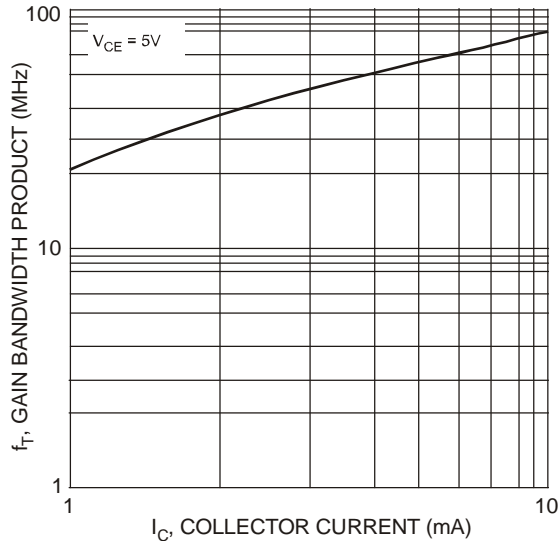


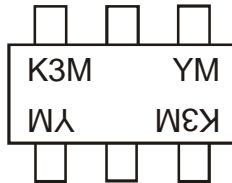
Fig. 5. Gain Bandwidth Product vs. Collector Current

Ordering Information (Note 5 & 7)

Device	Packaging	Shipping
MMDTA42-7-F	SOT-26	3000/Tape & Reel

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



K3M = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: P = 2003
 M = Month ex: 9 = September

Date Code Key

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View MMDTA42-7-F on WIN SOURCE](#)
- ⊖ [Diodes Incorporated Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management